

13. A culture initially has 6000 bacteria, and its size increases by 14% every hour. How many bacteria are present at the end of 4

Chemistry

Molarity

Name Morgan Jayme Lang

1. Molarity is a concentration unit, expressing the ratio of moles of solute to one liter of solution.

2. Calculate the molarity of the following solutions:

- a) 500.0 mL that contains 82.0 g of calcium nitrate
b) 250.0 mL that contains 50.0 g of copper(II) sulfate pentahydrate
c) 1000.0 cm³ that contains 116 g of sodium carbonate heptahydrate

$$\frac{.9997 \text{ mol}}{.5 \text{ L}} = .999 \text{ M}$$

3. Calculate the mass of solute required to make the following solutions:

- a) 250.0 mL of Na₂SO₄ · 7H₂O solution that is 2.00 M
b) 1.500 L of KH₂PO₄ solution that is 0.240 M
c) 2500. mL of HNO₃ solution that is 4.00 M

4. How many liters of solution can be made from each of the following:

- a) a 0.100 M solution using 117 g sodium chloride
b) a 1.00 M solution using 50.0 g of copper(II) sulfate pentahydrate
c) a 0.200 M solution using 200.0 g of sodium sulfide

16. Find the term containing x^{16} in the expansion of $(1 - x^2)^{29}$

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